

## Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (Currently Amended) A method for the investigation of patterns in collections of peak-containing data strings ~~or lists of peaks~~, each data string consisting of a set of intensity values and corresponding values of a scaling parameter, the method comprising the following steps:
  - (a) displaying the data of the collections of the peak-containing data strings ~~or peak lists~~ in graphical form,
  - (b) calculating significant patterns, correlations or classifications within one or between different collections of the peak-containing data strings ~~or the peak lists~~ by pattern recognition algorithms, thereby including a determination of peaks significantly participating in the calculation of the significant patterns, correlations or classifications, and
  - (c) highlighting, in the graphical display of the peak-containing data strings ~~or the peak lists~~, the peaks each intensity value corresponding to a scaling parameter value associated with a peak significantly participating in the calculation of the significant patterns, correlations or classifications.
2. (Previously Presented) A method according to Claim 1 wherein the peak-containing data strings are displayed, in step (a), by a density plot.
3. (Original) A method according to Claim 1 wherein features of the graphical display are interactively accessible.
4. (Previously Presented) A method according to Claim 3 wherein an ensemble of start peaks for the pattern recognition algorithms is selected from the graphical display.

- 1 5. (Currently Amended) A method according to Claim 3 wherein peaks are selected  
2 on the display before the pattern recognition algorithms are started and ~~the~~  
3 selected peaks are each intensity value that corresponds to a scaling parameter  
4 value associated with a selected peak is highlighted in the graphical display  
5 together with the peaks which significantly participate in the calculation of  
6 significant patterns, correlations or classifications.
- 1 6. (Previously Presented) A method according to Claim 3 wherein, after pattern  
2 recognition by the pattern recognition algorithms is completed, a peak on the  
3 graphical display is selected in order to show more information with respect to the  
4 peak's participation in the calculation of the significant patterns, correlations or  
5 classifications.
- 1 7. (Previously Presented) A method according to Claim 1 wherein the intensity  
2 values of the peak-containing data strings are transformed by a filter before the  
3 pattern recognition algorithm is applied.
- 1 8. (New) A method according to Claim 1 wherein the peak-containing data strings  
2 are lists of peaks characterized by an intensity value and a scaling parameter  
3 value per peak.
- 1 9. (New) A method according to Claim 1 wherein the peak-containing data strings  
2 are mass spectra or chromatograms.
- 1 10. (New) A method according to Claim 9 wherein the mass spectra are mass  
2 spectra of biomolecules affinity extracted from body fluids.
- 1 11. (New) A method according to Claim 10 wherein the biomolecules are proteins.

1 12. (New) A method according to Claims 10 or 11, wherein the mass spectra include  
2 at least one mass spectrum acquired from patients who have a well-confirmed  
3 and well-documented disease and at least one mass spectrum acquired from  
4 patients who do not have the disease.